ABSTRACT

A disk drive utilizes a track dependent variable write fault gate for each of the transducers within the drive. By deriving a 3 sigma distribution across the repeatable run out (RRO) and the non-repeatable run out (NRRO), a position error signal (PES) is derived which varies in magnitude across the stroke of the transducers and which has a slope used to derive variable write fault gate thresholds for the tracks associated with each transducer. As the stroke of the transducer moves from the outer diameter (OD) to the inner diameter (ID), the magnitude of the write fault gate thresholds may be decreased relative to the PES, and track density and capacity may increase where PES and write fault gate thresholds are low. The invention thus maintains a constant hard error recovery margin across the stroke.

J:\3123\-387\patent application